



Rules-of-thumb for problem-structuring policy design

Robert Hoppe

To cite this article: Robert Hoppe (2018) Rules-of-thumb for problem-structuring policy design, Policy Design and Practice, 1:1, 12-29, DOI: [10.1080/25741292.2018.1427419](https://doi.org/10.1080/25741292.2018.1427419)

To link to this article: <https://doi.org/10.1080/25741292.2018.1427419>



© 2018 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 29 Mar 2018.



Submit your article to this journal [↗](#)



Article views: 5818



View related articles [↗](#)



View Crossmark data [↗](#)



Citing articles: 1 View citing articles [↗](#)

Rules-of-thumb for problem-structuring policy design*

Robert Hoppe

Faculty of Behavioural, Management and Social Sciences, University of Twente, Enschede,
The Netherlands

ABSTRACT

This article provides practitioners with rules-of-thumb for policy design as both problem finding and problem solving. From their perspective, policy design is an inevitable moving back and forth between thinking out (“puzzling”) and fighting over policy (“powering”). It is, simultaneously, problem-structuring: “wicked” or unstructured problems are translated from problems as “messes” of undesirable situations to problems as specific, time-and-space bound opportunities for improvement. This article decomposes problem-structuring as an iterative process of problem sensing, problem categorization, problem decomposition and problem definition. For each of these problem-structuring functions, appropriate rules-of-thumb can be suggested that induce thought habits and styles for responsive and solid policy designs.

ARTICLE HISTORY

Received 10 January 2018
Accepted 15 February 2018

KEYWORDS

Policy design; heuristics; practitioners; problem structuring; politics of design; unstructured problems

“... the solution is part of finding the problem.” (Wildavsky 1979, 3)

1. Introduction: policy design is about structuring unstructured problems

For many, policy-making is the prerogative of a political élite; and policy analysis and design is decision-support for leaders (Radin 2013). This means that many policies are perceived as legacies of previous authoritative decisions that serve government control. Hence, citizens increasingly do not experience public policies as designs that help to better tackle their day-to-day problems.

Citizen alienation from politics and government is exacerbated by certain tendencies among policy advisors working for government. Policy-relevant information is framed by civil servants in ways that protect the power of incumbent political leaders

CONTACT Robert Hoppe  r.hoppe@utwente.nl  Faculty of Behavioural, Management and Social Sciences, University of Twente, Enschede, Overijssel, The Netherlands

*This article is an abbreviated and abridged version of R. Hoppe, 2017. Heuristics for practitioners of policy design: rules-of-thumb for structuring unstructured problems, *Public Policy and Administration*, doi: 10.1177/0952076717709338. The article is based on a conference paper, R. Hoppe, Problems and policy design: towards argumentative policy analysis. Prepared for IPSA 23rd World Congress of Political Science, RC 32 Public Policy and Administration, panel on Policymaking, Problematization and Policy Design, Montréal, 19–24 July 2014. Those interested in running examples of detailed application of the rules-of-thumb to real-life policy issues concerning town-and-country planning and car mobility in the Netherlands, can download the paper by accessing the author’s account at prepress.academia.edu or Research Gate.

© 2018 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

(Webber 1992; 't Hart et al. 2002, 157ff). Politicians themselves, preoccupied with polls, look to citizen preferences and behavior stylized in statistics; but their perspective is dominated by party-political, cabinet, or bureau-political interests and considerations of gaining or maintaining popular support and political power (Hajer 2009).

Another tendency is to rely on economic policy analytic expertise to ensure austerity and make sure that social benefits outweigh social costs (West 1988). Therefore, policy analysts look at welfare theory, institutional economics and public finance theories; and apply them by using the toolkit of modeling, cost-benefit and cost-effectiveness analysis, and related calculative heuristics. Policy design becomes a depoliticized exercise in “rational choice”, ticking off checklists of standard solutions for problems of government and market failures (Weimer and Vining 1999), or using another standardized set of policy formulation tools (Jordan and Turnpenny 2015). Yet another tendency of many Western countries in a neoliberal age that sees government not as a solution but as the problem, is a concern with the legitimacy, scope and capacity of government as institution and a justification of any government action. Policy advisors see policy analysis and design as the professional skill in choosing the right institutional mode(s) of governance and a fitting instrument mix from a toolkit of skills and resources (Howlett 2010; Howlett, Mukherjee, and Woo 2015).

As Toni Blair was fond of saying: we should organize government around citizens' problems. Therefore, I focus on a “what-is-the-problem-for-citizens?” form of policy design. It highlights not problem solving, but problem finding and structuring as major tasks. *What is problem-oriented and problem structuring policy design like?* What is the policy designer's task? This article uses an empirically grounded view of policy design practices (Hoppe, van de Graaf, and Besseling 1995; Hoppe et al. 1998; Hoppe and Jeliaskova 2006; Colebatch, Hoppe, and Noordegraaf 2010), to show how problem finding starts with interpreting inchoate expressions of collective unease, and results in the political choice of a better structured problem. This new problem structure should offer the credible promise of real improvement of a problematic situation for a majority of those affected by the policy as direct and, like many ordinary citizens, indirect stakeholders. Where promises of improvement are just not credible, choosing policy that causes less sacrifices or suffering is in order (Frissen 2013).

Section Two lists four guiding principles as enabling preconditions for a problem structuring approach to policy design: (1) problem sensitivity, (2) frame reflectiveness, (3) alternating forward and backward mapping, and (4) moving back and forth between puzzling and powering. Section Three first sets out the overall idea of policy design as problem structuring, and then elaborates rules-of-thumb that help practitioners in essential design functions or tasks: problem sensing, problem exploration, problem decomposition, problem definition, and the politics of timing. Section Four is a summary and conclusion. For practitioners the four guiding principles and fifteen more specific injunctions on how to perform the four essential design tasks have been condensed in numbered rules-of-thumb (**in bold**).

2. Structuring policy problems in policy design: four guiding principles

A problem-structuring approach to policy design has a deep philosophical root, called the question-answer logic of policy practice (Turnbull 2013). At the heart of this

approach is a novel, expanded understanding of the link between a question and an answer; hence, between a problem and a solution. The key insight is that any answer to a question is both a repression and an explication of that question. This is applied to successive explications and suppressions of the key questions in policy design:

- a. in problem sensing, the key question is: “Why is this situation a mess?”;
- b. in problem categorization, this starting question is suppressed or backgrounded and replaced by a new key question: “What gaps exist between the problematic and a more desirable situation?”;
- c. in problem decomposition, the question about gaps is backgrounded and replaced by the more constrained but pragmatic question: “Are there any potentially bridgeable gaps?”; and (d) in problem choice, the bridgeable gaps question is replaced by the political question: “Where exactly are opportunities for improvement/less suffering?”.

Thus, through reasoned or political suppression of previous key questions, the policy designer transforms an inchoate problematic situation, a “mess”, into a progressively well-articulated but delimited problem definition amenable to existing and novel policy practices as “solution” (I will return to this later where I explain [Figure 4](#)).

I propose four guiding principles or enabling habits of the mind as preconditions for problem structuring policy design: a sensitivity to problems; a frame reflective attitude; the skill to shift between forward and backward mapping styles of design; and, finally, the savviness to tack between design as analytic puzzling and political struggle against opposition or powering.

2.1. Problem sensitivity

Problem sensitivity is key to all social life of human beings; to question oneself and others means to be human (Hoppe 2010, 7–8; Turnbull 2013, xi). Humans have to respond to being thrown into their life, which presents itself as a question. Even the question-answer link presents itself as a problem. The most important feature of this link is its frequent de-coupling. Whether in informal probing of ordinary citizens, or in formal inquiry and research by experts in bureaucracy or academia, we tend to “autonomize” answers as “bodies of knowledge”, and in the process forget about the questions which triggered them (Turnbull 2013).

For politics and policy design this is crucial. All politics is grounded in accepted or imposed rules for questioning and answering. The question-answer divide is aggravated by the normal political division of labor in a representative democracy: ruled citizens ask questions, and ruling policymakers select persuasive and authoritative answers. To maintain or restore productive relations between policy design and public debate is axiomatic for responsible policy design that is responsive to citizens’ problems. It takes a lot of sensitivity to citizens’ problem perceptions and experiences to keep professionalized political and policy discourses connected to the questions that drive public debate in citizens’ pub and kitchen-table talk.

Rule-of-thumb 1. Be aware of the weakness of the question-answer links in everyday, political, policy and scientific discourse. Be alert to uncover triggering, but suppressed questions

One important insight is that not all public policy problems have the same question-answer structure. A simple definition of a “problem” is a perceived deviation of an existing state (“is”) from a desirable one (“ought”). The “is” is represented in the stock of available and relevant knowledge (answers) that can be used in understanding the problem (question). The certainty on this stock of knowledge may vary; that is, we can trust it more or less as a basis for collective action. The “ought” is represented in answers to questions about the set of norms, values, principles, ideals, interests and emotions at stake in tackling the problem (question). There can be more or less contentiousness or ambiguity in these normative issues. Crossing the certainty of knowledge and the ambivalence of valuative dimensions, one gets a four-fold typology of problem structures, as in [Figure 1](#). The pivotal issue in every process of policy design is: how to move in a responsible way from politically intractable, unstructured or less structured policy problem types towards the politically “tamed” or structured ones (Hoppe 2010)?

2.2. Frame reflectiveness

In practice, problem awareness also requires *frame reflectiveness* (Schön and Rein 1994). In problem-structuring policy design, frame-reflectiveness means to explicate

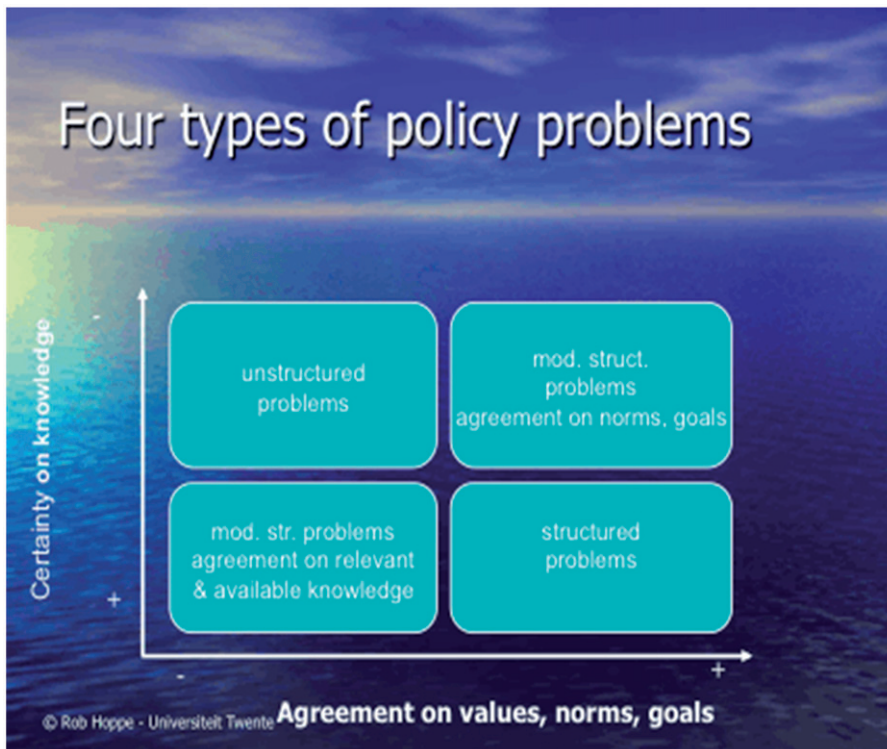


Figure 1. Four types of policy problems.

the often-tacit questions, dimensions and assumptions that, as the invisible under-water nine-tenths of the visible tip of an iceberg, really drive debates about policy. Frames are the links between inchoate worries, concerns and fears that initiate a probe for a meaningful response: “Framing combines with questioning to shape the substantive problems which form the content of the policy process” (Turnbull 2006, 7).

Framing is a question-answer process that highlights some questions, suppresses a lot of others, and thereby steers allowable and legitimate answers. Frames allow you to select and foreground the important properties or dimensions of problematic situations, screen out or background less salient features, and yet bind the whole into a coherent pattern (Hoppe 2010, 54–55). But framing in politics and policymaking can be a hidden process that is embedded in a dominating policy discourse. Thus, framing is also a strategic tool for exercising power as it offers ample opportunities to systematically promote your own solutions over those of others. For example, US Republicans rebranded the Affordable Care Act as “Obamacare”, deemphasizing “affordable health care” and nurturing an association with “government takeover” (Lakoff 2014, 60). Both for puzzling and powering reasons, policy designers ought to be aware of and recognize the many different frames floating around in everyday political and policy discourse. It is a prerequisite for disrupting ingrained, perhaps hegemonic governmental practices; it is essential as condition for creativity and opening up search for new combinations (Considine 2012).

Rule-of-thumb 2. Know your way in the most important frames in political, policy and scientific discourses; pay special attention to frames outside the mainstream of unquestioned political and policy discourses.

2.3. Alternating forward and backward mapping

A pivotal task in policy design is the systematic confrontation of political frames of those who advocate policy innovation, with the frames of those citizen groups whose attitudes, beliefs and behaviors are in need of being changed in those advocates’ eyes (Grin and Van de Graaf 1996). Another major task is to confront both the organizational and professional frames of those who will have to translate policy initiatives into new governmental practices. Frame-reflectiveness requires a wide survey of relevant actors’ frames in the entire policy network; a matter of constructing an interpretive balance between the *forward mapping* perspectives of politicians and policy entrepreneurs, and the *backward mapping* perspectives of implementers and citizens as target groups (Elmore 1985) (Figure 2).

Forward mapping is the thought style of policy entrepreneurs, politicians and high-level policymakers (Hoppe et al. 1998). They think in the groove of change; so, policy innovation is inherently desirable. Party-politically desirable goals are a given. The logical next step is to translate them in policy objectives, programs, instruments, and standard operating routines. This design logic is frequently over-optimistic about a government’s capacity to initiate or impose change.

In responsive policy design, backward mapping is equally required. It is the inverse of forward mapping and it comes in two modes. Backward mapping

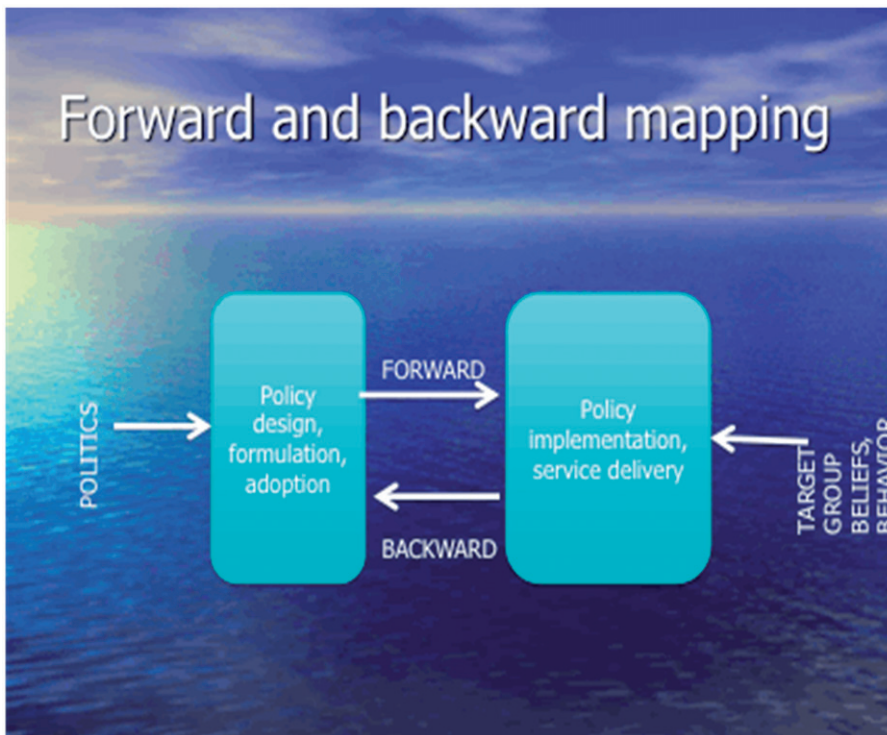


Figure 2. Forward and backward mapping.

from the implementers' perspective means taking as departure for design the standard operating routines, numbers, skills, capacities, and preparedness of implementing agencies, firms, or intermediary bodies in the (anticipated) implementation process. A major concern is whether or not those involved in (anticipated) implementation are capable and willing to adapt their working routines. This is where good overviews of types of policy instruments and instrument-mixes are useful (Howlett, Mukherjee, and Woo 2015). The feasibility of a politically desirable goal increases the less change is necessary. This clearly means that backward mapping from the implementers' perspective is as biased as forward mapping. Political desirability and creativity are potentially being taken hostage by organizational inertia and resistance.

A second mode of backward mapping is taking the *target group's or citizens' perspective*. The policy designer puts herself in the shoes of those social actors who will be required to change their knowledge, attitude, or behavior as a condition for achieving central policy goals. Here too, the prime concern in the design exercise is: are these people capable and willing to change their decisions and actions in the politically desired direction? For example, in the Netherlands introducing market-like incentives in health care insurance vastly overestimated citizens' willingness and skills to shop around for cheaper insurance packages. Systematically addressing and answering such questions about citizens' problem frames and action scripts during

problem finding and policy preparation is key in backward mapping from the citizens' perspective.

Rule-of-thumb 3. Policy design requires familiarity with both forward and backward mapping styles of policy design, and the ability to see them as making up for each other's shortcomings.

2.4. Moving back and forth between puzzling and powering

Public policy design is embedded in a political task environment. Many researchers and authors look at "politicking" as spoiling solid analysis and design. However, the practice of policy design inevitably is a mix of fighting over and reasoning out policy (Lindblom and Woodhouse 1993, 12). The occurrence and sequence of design routines or episodes all have their own puzzling/powering mix. Metaphorically speaking, policy designers should have the political savviness to see why their next move on the "chess board" of strategic design is determined by the "KO swing" of an antagonistic bureaucratic agency. Practically, the policy designer is best advised to see puzzling/powering as a dynamic dual process, propelled by pulses of now puzzling, then powering.

Rule-of-thumb 4. Policy design is fighting over and reasoning out policy - both, intertwined and simultaneously. From a practical point of view, it is best considered an alternating process. Policy designers should be able to stand the "political heat" in the "design kitchen".

3. Structuring unstructured problems

3.1. The overall idea: from unstructured to structured problems

Policy problems are not objectively given properties of situations to neutral observers. They are actively constructed definitions of reality by opinionated and committed actors, to be used in a process of claims-making to persuade others. What then, in the public sector, counts for "good" problem definition? If problems are social and political constructions, is one problem definition as good as another? There are two competing perspectives on the answer.

The top-down perspective asks how policymakers process public perceptions of problems so as to fit these to their institutional and organizational frames and action repertoires. Taking this perspective, Dery (1984, 21–27) has proposed three criteria to judge "good" problem definitions:

1. A problem definition should fit a feasible solution; this is why in problem-structuring policy design one has to speak of problem-solution couplings all the time; problem definitions (as questions) and solutions (as answers) cannot be framed independently of each other;
2. A problem definition ought to be geared to some actor's intervention capacity; i.e. a problem ought to be fit for organizational or inter-organizational action;
3. Last but not least, a problem definition ought to be seen as a realistic opportunity to improve a current problematic situation, according to the standards or feelings of a majority of active and passive stakeholders.

An alternative perspective is the potential mismatch between problems-as-processed-by-official-policymakers and problems-as-experienced-by-social-actors, as citizens in civil society. In cases of a permanent mismatch, public policymakers are justly accused of solving the wrong problem. Such wrong-problems are politically risky, as they may result in protracted controversies (Schön and Rein 1994; Hisschemöller and Hoppe 1996; Mitroff and Silvers 2010), which may occasionally spread from one policy domain to others, thereby endangering the viability of an entire political system.

Frequently, problems-as-processed-by-authoritative-policymakers entail path-dependent, structured problem definitions that exclude promising alternative solutions seriously considered by other societal actors. In such cases, policymakers must find a new balance between dogma and scepticism (Wildavsky 1979, 206–208), to allow room for questioning the politically entrenched problem structure, and opening up the intellectual and social parts of public policymaking to new ideas and actors. In other cases, not-yet-processed novel problems emerge, which, after a while, achieve public and political agenda status. Such problems may be “wicked” or unstructured. Here, good governance means sincere political attempts to move the unstructured problem into more structured directions, as moderately structured and structured problems lend themselves more to (inter-)organizational policymaking and implementation (Figure 3).

Rule-of-thumb 5. Consider each policy problem as unstructured at first; work towards one or more structured problems.

Balancing between forward and backward mapping is a practical art, not a design science. Clearly, such a balanced, prudent approach to problem structuring is not easy to

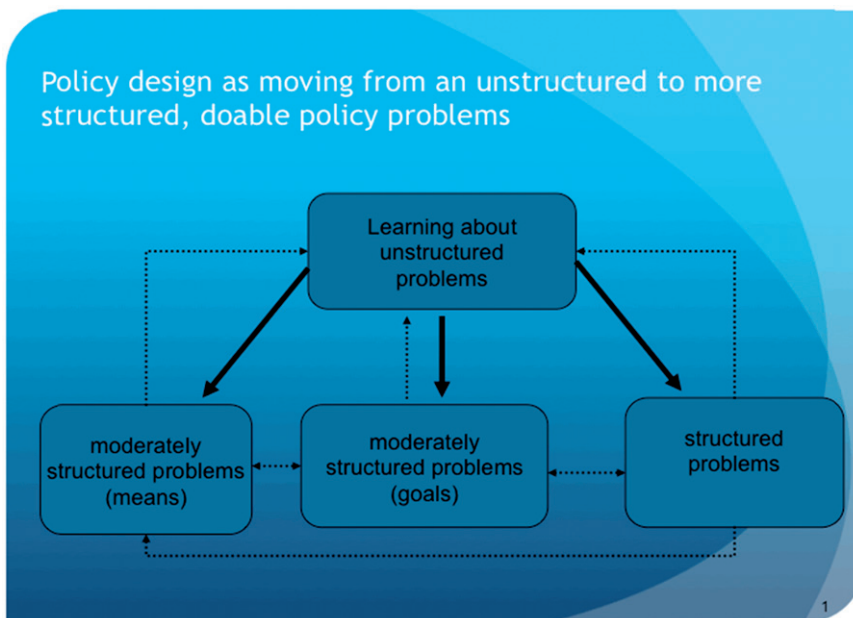


Figure 3. Policy design as moving from unstructured to more structured, doable policy problems.

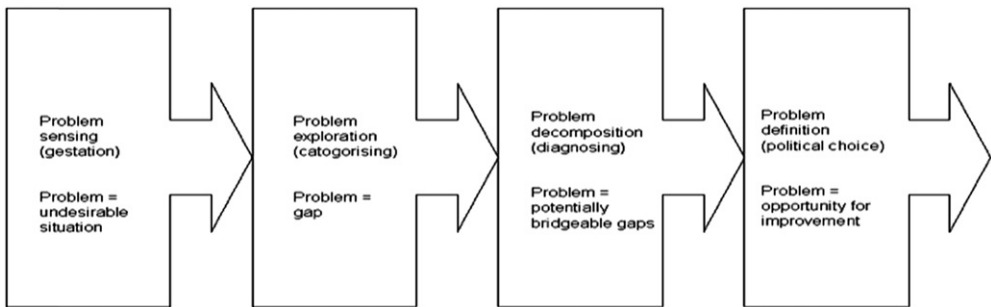


Figure 4. Simplified sequential model of a questioning-based policy design process (Source: Cowan 1986; Van de Graaf and Hoppe 1989).

achieve. It means hard work for policy designers, who are well-advised to spend up to a third to half of the time allocated to analysis and design in finding the “right” problem.

Rule-of-thumb 6. Rather an approximate solution to the right problem, than a fully elaborated solution to the wrong problem.

Although in reality an interdependent and heavily intertwined system of simultaneous *functions* (Dunn 2018), for didactic reasons I depict the process of problem finding as a sequence of *stages*: problem sensing, problem exploration, problem decomposition, and political choice of a problem definition. For each “stage”, the image of the problem (question) is transformed in a new (set of) question(s), and appropriate heuristics for responsive policy design will be suggested (Considine 2012) (Figure 4).

3.2. Rules-of-thumb for problem sensing or problem gestation

Policies come about as temporary negotiated settlements of the conflicts and struggles between formal participants in the policymaking process (Lindblom and Woodhouse 1993; Gale 2003). For many policy designers this means that “new” problems emerge from implementation problems, management evaluations of public agency performance, or more critical reviews of policy outputs from independent or “higher” administrative agencies like the General Accounting Office, or external evaluation bodies. In such cases, problem perception is not an external input in the policymaking machinery of government; it is actually “withinput”, concerned with administrative self-perception and self-evaluation. Against this endless stream of “withinputs”, responsive policy designers do well to stay attuned to and rely on external and non-governmental inputs.

Rule-of-thumb 7. In order not to lose contact with society, balance attention to “withinputs” from official sources with information from external formal and informal sources.

Policy designers “stumble upon” a stream of complaints and protests that indicate many people deem certain developments undesirable and that “politics” or “government” should intervene. Of course, no government accepts such claims without making up its own mind about their acceptability, in light of its own problem perception and problem-solving capacity. Moreover, there is the issue of the “proper”

role of the state in tackling collective ills – a question rife with ideological contention. Also, the social and political climate simply may not yet allow a more precise description and interpretation of what is so “messy” about a situation. There may be multiple, but equally plausible interpretations and analyses in good public standing. One may speak of a period of problem latency and problem gestation (Cowan 1986, 766) from which some more intellectually or politically dominant framing is yet to surface. Nevertheless, forward looking designers should develop a keen eye and ear for serious and sustained expressions of unease and discomfort, however inchoate, under-articulated, and not-yet-well-analyzed (Yankelovich 1991, 160).

Rule-of-thumb 8. The priority rule in problem sensing for responsive policy design is to know the public’s starting point.

In problem sensing the designers’ task is a two-fold. First, they will develop a descriptive map of the problematic situation; and second, they will have to get as much knowledge as possible about the frames of the problem owners “out there”. Many governments maintain quantified databases, indicator systems and statistics for issues using time series of quantitative official data (Hogwood and Gunn 1984, 78–65; Hallsworth, Parker, and Rutter 2011). Designers will judge a problem’s urgency and future development from its changing size and scope. For newly emerging issues such databases at best provide a first-cut approach. If mistaken for a full analysis of new problems, analysis of existing data may prove to be a flawed first step. In such cases, listening to and registering narratives of street-level bureaucrats and stakeholders about their problem perceptions and experiences is the only feasible way to get a feel for the problem (Borins 2011; Lejano, Ingram, and Ingram 2013). Methods and techniques for joint knowledge production may be profitably used at this stage (Edelenbos, van Buuren, and van Schie 2011). Curiously enough, this is all the more necessary when the new, but inchoate problem is caused by government practices and previous policy interventions. For example, Kafkaesk regulatory labyrinths for the unemployed who need access to workfare programs, or for the chronically ill who need access to subsidies for their medication, are hard to measure and quantify; only patient collection of “horror stories” in brochures or black books may persuade policymakers to pay attention.

Rule-of-thumb 9. In getting a good feel for new problems, create joint knowledge by using both quantitative official data and stakeholder narratives.

To enable designers to explore and keep track of the development of problem salience and urgency over time, they need is a method for debate auditing and policy network auditing. Governments have already adopted debate tracking methods. Following and interpreting the polls on an almost daily basis nowadays is considered an integral part of the art of governing. Spinning the news by professionalized political “marketeers” is as much a routine mode of governing as a technique of winning elections. The major reason for the insufficiency of polling (and mass surveys, for that matter) as a means for problem sensing and framing is the volatility and manipulability of public opinion.

Organizing internet discussions and forums is a somewhat better approach. But experiences remain ambivalent, and tainted by the fact that it is the policymaking

organization that initiates and moderates the internet debate (Edwards and De Kool 2015). The same goes for frequently applied methods like focus groups and mini-publics, and other qualitative methods like network mapping which include modeling the mental maps of network actors or ordinary citizens (Fung 2003; Hoppe 2010).

A better alternative is using a multi- and inter-media or arena-model of mapping social debates. One of the best ways to achieve this is the social problems arena model (Renn 1992; Hilgartner and Bosk 1998; Joly and Assouline 2001), as an analytical technique to perform the task of mapping and tracking social debates on a particular policy issue in multiple media. The technique sets out from a six-arena model of public debate – economic, scientific, public policy, legal, religious, and (social) media. The more the same debate occurs in several media simultaneously, the more salient the issue. The arena model is particularly useful for taking into account how social media are not just used to disseminate news and ideas and create “echo-chambers” and “bubbles”, but, moreover, how they also mobilize people in “connective action”, (Bennett and Segerberg 2014; Birckbak 2016). Meanwhile, there is a plethora of available methods of discourse and argumentation analysis to process and analyse such “big data” without the biases of technologically mediated but implicit price mechanisms embedded in the algorithms used by contemporary digital platforms (Gee and Handford 2012).

Rule-of-thumb 10. Use an arena-model and discourse or argumentation analysis in tracking and auditing public debates (including in social media) as input into policy design processes.

3.3. Rules-of-thumb for problem exploration and categorizing

In this stage, analysis and design come into their own. What is needed is a first-cut exploration of the consequences for policy of accepting possible problem framings. This means that the “same” problematic situation ought to be, tentatively, depicted as a gap between some clearly stated norms or standards, and more precisely defined (changes in) the problematic situation. Using Cowan’s (1986, 766) model, this is labeled problem categorization – problems are put into a specific category, but only tentatively, without necessarily accepting the standards or models used as basis for policy.

In forming a political judgment on a public issue, one tries to think the issue through from the perspectives of other actors (Arendt 1968, 241). Only after circling around the issue from several perspectives does one get a better feel for the possibilities and objections against framing a problem in a particular way in an anticipated political exchange between protagonists and antagonists. Thus, problem exploration and categorization are important steps in arriving at responsible political judgment on problem framings.

Rule-of-thumb 11. Reflective policy designers approach problem exploration as frame experiments.

A detailed empirical study on practices of reflective designers, shows that problem exploration and categorization is a trial-and-error process of problem framing (Schön

1983, 131–132). First, the problem frames that emerged from problem sensing must be explicated, formulated, and criticized. Second, the policy designer tries out all kinds of suggestions for elaborations and redefinitions, or even alternative framings. In this stage, no choices are made; hence the process of frame reflection and experimentation remains one of double, sometimes triple vision. One is reminded here of Scott Fitzgerald’s definition of a “first rate mind” as someone who can keep two or more contradictory ideas alive and yet not paralyze one’s thinking.

Often, problem exploration and categorization means imposing well-known disciplinary or professional concepts, standards, models and theories as a “proxy” on the problem frames discovered. Specialists and experts attempt to model, given the selected professional or disciplinary frame, the chain of causal links active in a certain policy area. This may be a simple arrow model, or a set of thousands of mathematically formulated connections, for example in econometric models. Such (causal) models are a launching platform for the next, third step.

Rule-of-thumb 12. To a reflective designer, causal model construction by disciplinary experts is a form of frame experimentation.

In this phase, knowing full well they deal with “proxies”, policy analysts and designers have no choice but to recruit policy-oriented experts and specialists (MacRae and Whittington 1997). After all, they have a semi-monopoly on model building. But the increase of computer-supported possibilities for model construction corresponds to an increase in interactive or participatory modes of experimental model construction for non-expert and yet important policy actors and stakeholders (Loeber 2004; Rosenhead and Mingers 2011; Vandenboeck 2012).

Rule-of-thumb 13. Wherever possible, reflective designers use interactive or participatory modes of soft-systems modeling in frame experiments that cross disciplinary boundaries.

Interactive model building can be used for less-structured problems for many reasons. The systems dynamics or soft systems methodology in most modeling techniques forces participants to be precise and transparent about the relations between causes and consequences. By involving participants who normally work under a taken-for-granted division of labor, the modeling exercise will raise awareness of mutual dependencies. By letting involved policy actors with different perspectives work as a group, the shared experiences may well pay off later as a team-building effort (Rouwette, Vennix, and van Mullekom 2002).

3.4. Rules-of-thumb for problem decomposition or diagnosis

Decomposing a problem in independently solvable partial problems is the basis of all complex problem solving (Simon 1992). It is unavoidable also in public policy analysis and design; even in the case of unstructured policy problems. For example, policies on drug addiction may be decomposed in a law-and-order part (prevention and repression), a public health part (harm reduction), and an urban quality of life part (keeping locations for medical services to addicts away from public parks, bus and train stations, schools and shopping malls). The policy

designer ought to take care that at least some partial problems have effective and feasible solutions. In problem exploration and categorization, the policy “knot” was disentangled in clear, but perhaps mutually incompatible or contradictory problem frames and models. Now, in problem decomposition and diagnosis, the policy problem as a number of clear gaps has to be further processed into a set of potentially bridgeable gaps. Politically, the practical conjunction between technically solvable partial problems requires the keeping alive of a keen awareness of the original problematic conditions.

Sometimes problem decomposition is easy because in (moderately) structured policy problems the decomposition principle is politically unproblematic and technically functional. In less structured and politically contested policy problems, like in the case of drug addiction problems, decomposition is not possible without generating a lot of (bureau)political struggle (Australian Public Service Commission 2012). Problem decomposition may become either a protracted framing tug-of-war, or a bumpy learning process between different views on how to decompose an issue in acceptable sub-problems. Such “joined-up governance” may be achieved, for example, by means of workshops, simulations, policy exercises, elaboration of different policy scenarios, or even court-like confrontations between protagonists and antagonists of certain views. The heart of the matter is to systematically expose the most vital policy assumptions of one view to criticism from the alternative view(s) – and vice versa (Mason and Mitroff 1981). In this way, analysts discover the most plausible and tenable assumptions, positions and arguments to be later fitted into the policy design. Politically competing problem frames will often remain visible in the choice of decomposed, partial problems. The visibility of competing problem frames may be both analytically useful as parallel experiments (Ellerman 2014) and politically unavoidable as political compromises.

Rule-of-thumb 15. Decomposing larger problems into sub-problems is intellectually and pragmatically unavoidable, either through learning or political struggle; in both cases it is about exposing, comparing and confronting key assumptions in the problem frames under consideration.

One of the most systematic elaborations of this method is Constructive Conflict Methodology (Cuppen 2012). Other methods rely more on building group consensus, like Analysis for Interconnected Decision Areas (AIDA, Friend and Hickling 1987, 109–173), and Morphological Analysis (Ritchey 2011).

Especially in this decomposition stage, where solvable problem parts are identified, listening to the voice of implementers and citizens is necessary. The forward mapping reasoning of politicians and policy entrepreneurs ought to be exposed to sobering backward mapping stories from the lifeworlds of citizens and action opportunity spaces of street-level bureaucrats. Most importantly, it ought to become clear whether or not available policy instruments can realistically *nudge* implementers and citizens towards more politically desired behavior (Sunstein and Thaler 2009).

Rule-of-thumb 16. Backward mapping from the implementers’ and target group perspectives is part of the learning about key assumptions in alternative policy frames to be used in satisfactory problem decomposition.

3.5. Rules-of-thumb for choice of problem definition

The final step of problem structuring is demonstrating that the problem as set of potentially bridgeable gaps indeed has effective and feasible solutions. On closer inspection, problem definition is about two types of claims. The first, analytical claim is that the partial problems distinguished are technically solvable. This requires a policy designer to elaborate credible means-ends relations in a specific context of implementation. The second, politically more important claim is that solving some partial problems is a worthwhile endeavor compared to the original problem “as a whole”. In other words, a designer should be able to claim that the amount of net problem reduction is substantial enough. This is a credible claim only if it can be shown that a majority of stakeholders and political representatives would experience the sum of the proposed solutions as an opportunity for improving the problematic situation; or, in case improvement is out of reach, that sacrifices and risks are minimized and fairly distributed.

From an analytic position, making such claims requires detailed goals-means or ex ante effectiveness evaluation, and some approximation of the logic of multi-criterion analysis (MacRae and Whittington 1997; Stirling 2006). By systematically judging proposed solutions to sub-problems in light of a well-selected set of relevant but usually heterogeneous criteria, one arrives at the conclusion that some options are better. Through the use of “scorecards” and other visualization and participatory techniques, multi-criterion evaluation has been turned into a group decision support format (e.g. Nutt 1989, 409ff).

Rule-of-thumb 17. The choice of policy problem definition is always a political decision, but informed by goals-means and multi-criterion decision analyses.

So far, formal multi-criteria analyses exist more as inspiring examples in handbooks than in practice (Shapiro 2016). In many cases of real-life policymaking, satisficing or incrementalist heuristics and strong political pressure decide the choice for merely doable, suboptimal solutions (Grossmann 2014; Lancaster et al. 2017). This is because the results of formal multi-criteria analyses raise choices, dilemmas even, that cannot be decided by analysis alone, but require political negotiation, bargaining and logrolling. In this sense, problem definition requires a political decision to stop thinking and shift to public action. The political reality is that, in the case of “unsolvable” problem parts, the resulting policy design will inevitably contain symbolic content. Sooner or later the intellectual debate on problem structuring is cut off by political decisions in which politicians take responsibility for the choice of a particular problem definition and its “solutions”. This is a forceful reminder that problem definitions come about and ought to be tenable in political environments. Many authors disparage symbolic policies as by definition misleading the public, as “words that succeed and policies that fail” (Edelman 1977). But symbolic policies may also be interpreted as political signals in favor of continued debate and problem-driven research. In the case of improvement policy, it is used as a motive to compensate the “losers”. In the case of risk and harm minimization policy, continuing debate keeps policymakers alert to opportunities for later improvement.

Rule-of-thumb 18. Symbolic policy is politically unavoidable, and may be conducive to social learning through continued political debate and prudent deliberation.

4. Conclusions

Problem structuring is both a cognitive-analytic and a political- interactive process. Top-down or bottom-up, good politics requires problem-structuring policy analysis and design. It is politically inescapable that a problematic situation as sensed by many in society should be processed into some well- or at least more-structured policy problem to become amenable to collective action. Only a method of policy design that pays equal attention to the functions of problem sensitivity, frame reflection, forward and backward mapping, and prudent tacking between puzzling and powering, may achieve a politically responsible and legitimate problem definition. It takes analytical and political acumen to achieve this. But who desires to lead the many should not always march in the vanguard. Therefore, thoughtfulness and a good sense for political timing are as important in problem structuring as analytical perceptiveness and political courage. On an optimistic note, the policy designer is like a good gardener: she knows how to bring some order and pattern into the world; but she also knows how much hard work, time and patience it takes. On a more sober, perhaps tragic note, she realizes that policy design will remain a kind of unending Sisyphus labor (Latour 2003) – in Samuel Beckett’s memorable words: “Ever tried. Ever failed. No matter. Try again. Fail again. Fail better.”

Acknowledgments

I am grateful for editorial assistance and review by Margarita I. Jeliaskova.

Disclosure statement

No potential conflict of interest was reported by the author.

References

- Arendt, H. 1968. *Between Past and Future: Eight Exercises in Political Thought*. Harmondsworth: Penguin.
- Australian Public Service Commission. 2012. *Tackling Wicked Problems: A Public Policy Perspective*. Accessed 25 January 2018. <http://www.apsc.gov.au/>
- Bennett, W. L., and A. Segerberg. 2014. *The Logic of Connective Action: Digital Media and the Personalization of Contentious Politics*. Cambridge: Cambridge University Press.
- Birkbak, A. 2016. *Caring for Publics. How Media Contribute to Issue Politics*. Aalborg: Aalborg University Press.
- Borins, S. 2011. *Governing Fables: Learning from Public Sector Narratives. Research in Public Management*. L. R. Jones, ed. Charlotte, NC: Information Age Publishing.
- Colebatch, H, R. Hoppe, and M. Noordegraaf, eds. 2010. *Working for Policy*. Amsterdam: Amsterdam University Press.
- Considine, M. 2012. “Thinking Outside the Box? Applying Design Theory to Public Policy.” *Politics and Policy* 40: 704–720. doi:10.1111/j.1747-1346.2012.00372.x.
- Cowan, D. A. 1986. “Developing a Process Model of Problem Recognition.” *Academy of Management Review* 11: 763–776. doi:10.5465/AMR.1986.4283930.
- Cuppen, E. 2012. “Diversity and Constructive Conflict in Stakeholder Dialogue: Considerations for Design and Methods.” *Policy Sciences* 45: 23–46. doi:10.1007/s11077-011-9141-7.

- Dery, D. 1984. *Problem Definition in Policy Analysis*. Lawrence KS: Kansas University Press.
- Dunn, W. N. 2018. "Theories of the Policy Process: Lasswell's Unfinished Revolution." In: Colebatch H, and R. Hoppe, eds. *Handbook on the Policy Process*. Cheltenham: Edward Elgar, to be published.
- Rouwette, E. J., Vennix, and T. van Mullekom. 2002. "Group Model Building Effectiveness: A Review of Assessment Studies." *System Dynamics Review* 18: 5–45. doi:[10.1002/sdr.229](https://doi.org/10.1002/sdr.229).
- Edelenbos, J., A. van Buuren, and N. van Schie. 2011. "Co-producing Knowledge: Joint Knowledge Production Between Experts, Bureaucrats and Stakeholders in Dutch Water Management Projects." *Environmental Science and Policy* 14: 675–684. doi:[10.1016/j.envsci.2011.04.004](https://doi.org/10.1016/j.envsci.2011.04.004).
- Edelman, M. 1977. *Political Language: Words That Succeed and Policies That Fail*. New York: Institute for the Study of Poverty.
- Edwards, A. R., and D. de Kool. 2015. *Kansen En Dilemma's Van Digitale Democratie – Wat Kan Digitale Burgerbetrokkenheid Betekenen Voor Het Nederlandse Parlement*. Den Haag: Ratheneu Instituut.
- Ellerman, D. 2014. "Parallel Experimentation: A Basic Scheme for Dynamic Efficiency." *Journal of Bioeconomics* 16: 259–287. doi:[10.1007/s10818-014-9175-y](https://doi.org/10.1007/s10818-014-9175-y).
- Elmore, R. 1985. "Forward and Backward Mapping: Reversible Logic in the Analysis of Public Policy." In: K. Hanf aTT, ed. 33–70. *Policy Implementation in Federal and Unitary Systems*. Dordrecht: Kluwer.
- Friend, J., and A. Hickling. 1987. *Planning Under Pressure. The Strategic Choice Approach*. 3rd ed. Amsterdam: Elsevier.
- Frissen, P. 2013. *De fatale staat. Over de Politiek Noodzakelijke Verzoening Met Tragiek*. Amsterdam: Uitgeverij Van Gennep.
- Fung, A. 2003. "Recipes for Public Spheres: Eight Institutional Design Choices and their Consequences." *Journal of Political Philosophy* 11: 338–367. doi:[10.1111/1467-9760.00181](https://doi.org/10.1111/1467-9760.00181).
- Gale, T. 2003. "Realizing Policy: The Who and How of Policy Production." *Discourse: Studies in the Cultural Politics of Education* 24: 51–65. doi:[10.1080/01596300303026](https://doi.org/10.1080/01596300303026).
- Gee, J. P., and M. Handford, eds. 2012. *The Routledge Handbook of Discourse Analysis*. London and New York: Routledge.
- Grin, J., and H. van de Graaf. 1996. "Implementation as Communicative Action. An Interpretive Understanding of Interactions Between Policy Actors and Target Groups." *Policy Sciences* 29: 291–319. doi:[10.1007/BF00138406](https://doi.org/10.1007/BF00138406).
- Grossmann, M. 2014. *Artists of the Possible. Governing Networks and American Policy Change Since 194*. Oxford: Oxford University Press.
- Hajer, M. A. 2009. *Authoritative Governance: Policymaking in the Age of Mediatization*. Oxford: Oxford University Press.
- Hallsworth, M., S. Parker, and J. Rutter. 2011. *Policy Making in the Real World. Evidence and Analysis*. London: Institute for Government.
- Hilgartner, S., and C. L. Bosk. 1998. "The Rise and Fall of Social Problems: A Public Arenas Model." *American Journal of Sociology* 94: 53–78.
- Hisschemöller, M., and R. Hoppe. 1996. "Coping with Intractable Controversies: The Case of Problem Structuring in Policy Design and Analysis." *Knowledge for Policy* 4: 40–60.
- Hogwood, B. W., and L. A. Gunn. 1984. *Policy Analysis for the Real World*. Oxford: Oxford University Press.
- Hoppe, R. 2010. "Institutional Constraints and Practical Problems in Deliberative and Participatory Policy Making." *Policy and Politics* 39: 163–183.
- Hoppe, R. 2010. *The Governance of Problems. Puzzling, Powering, and Participation*. Bristol: Policy Press (2011 soft cover edition).
- Hoppe, R, H. van de Graaf, and E. Besseling. 1995. "Successful Policy Formulation Processes: Lessons from Fifteen Case Experiences in Five Dutch Departments." *Acta Politica* 30: 153–188.

- Hoppe, R., M. Jeliaskova, J. Grinen, and H. van de Graaf. 1998. *Beleidsnota's Die (Door)Werken. Handleiding Voor Geslaagde Beleidsnota's*. 3rd revised ed. Bussum: Coutinho.
- Hoppe, R, and M. I. Jeliaskova. 2006. "How Policy Workers Define their Job: A Netherlands Case Study." In: Colebatch, H., R. Hoppe, and M. Noordegraaf, eds. *The Work of Policy: An International Survey*, 35–60. Lanham: Lexington Books.
- Howlett, M. 2010. *Designing Public Policies: Principles and Instruments*. Milton Park: Routledge.
- Howlett, M., I. Mukherjee, and J. J. Woo. 2015. "From Tools to Toolkits in Policy Design Studies: The New Design Orientation Towards Policy Formulation Research." *Policy and Politics* 43: 291–311. doi:[10.1332/147084414X13992869118596](https://doi.org/10.1332/147084414X13992869118596).
- Joly, P. B., and G. Assouline. 2001. *Assessing Public Debate and Participation in Technology Assessment in Europe* (Adapta), Final Report. Grenoble INRA/QAP Decision. <http://www.inra.fr/Internet/Directions/SED/science-gouvernance/pub/ADAPTA/>.
- Jordan, A. J. J., and J. R. Turnpenney, eds. 2015. *The Tools of Policy Formulation. Actors, Capacities, Venues and Effects. New Horizons in Public Policy*. Edited by Wayne Parsons. Cheltenham UK, Northampton MA USA: Edward Elgar.
- Lakoff, G. 2014. *The All New Don't Think of an Elephant!, White River Junction*. Vermont: Chelsea Green Publishing.
- Lancaster K., A. Ritter, C. Hughes, and R. Hoppe. 2017. "A Critical Examination of the Introduction of Drug Detection Dogs for Policing of Illicit Drugs in New South Wales, Australia Using Kingdon's 'Multiple Streams' Heuristic." *Evidence and Policy* 13 (4): 583–603. doi:[10.1332/174426416X14683497019265](https://doi.org/10.1332/174426416X14683497019265).
- Latour, B. 2003. "What if We Talked Politics a Little?" *Contemporary Political Theory* 2: 143–164. doi:[10.1057/palgrave.cpt.9300092](https://doi.org/10.1057/palgrave.cpt.9300092).
- Lejano, R., M. Ingram, and H. Ingram. 2013. *The Power of Narrative in Environmental Networks American and Comparative Environmental Policy*. Edited by S., Kameniecki, M., Kraft. Cambridge: MIT Press.
- Lindblom, Ch. E., and E. J. Woodhouse. 1993. *The Policymaking Process*. Englewood Cliffs NJ: Prentice Hall.
- Loeber, A. 2004. *Practical Wisdom in the Risk Society*. Amsterdam: thesis University of Amsterdam.
- MacRae Jr., D., and D. Whittington. 1997. *Expert Advice for Policy Choice. Analysis and Discourse*. Washington D.C.: Georgetown University Press.
- Mason, R.O., and I.I. Mitroff. 1981. *Challenging Strategic Planning Assumptions. Theory, Cases, and Techniques*. New York: Wiley & Sons.
- Mitroff, I. I., and A. Silvers. 2010. *Dirty Rotten Strategies. How We Trick Ourselves and Others into Solving the Wrong Problems Precisely High Reliability and Crisis Management*. Edited by K. H Roberts, and Mitroff, I. I. Stanford: Stanford Business Books.
- Nutt, P. C. 1989. *Making Tough Decisions. Tactics for Improving Managerial Decision Making*. San Francisco and London: Jossey-Bass.
- Radin, B. A. 2013. *Beyond Machiavelli: Policy Analysis Reaches Midlife*. 2nd ed. Washington D.C.: Georgetown University Press.
- Renn, O. 1992. "The Social Arena Concept of Risk Debates." In *Social Theories of Risk*. Edited by Krinsky S., and S., Golding, 179–196. Westport CT: Praeger.
- Ritchey, T. 2011. *Wicked Problems - Social Messes. Decision Support Modellen with Morphological Analysis*. Heidelberg: Springer.
- Rosenhead, J., and J. Mingers, eds. 2011. *Rational Analysis for a Problematic World Revisited. Problem Structuring Methods for Complexity, Uncertainty, and Conflict*. Chichester: Wiley & Sons.
- Schön, D. A. 1983. *The Reflective Practitioner*. New York: Basic Books.
- Schön, D. A., and M. Rein. 1994. *Frame Reflection: Towards the Resolution of Intractable Policy Controversies*. New York: Basic Books.
- Simon, H. 1992. *Sciences of the Artificial*. Cambridge: MIT Press.

- Stirling, A. 2006. "Analysis, Power, and Participation: Justification and Closure in Participatory Multi-Criteria Analysis." *Land Use Policy* 23: 95–107. doi:[10.1016/j.landusepol.2004.08.010](https://doi.org/10.1016/j.landusepol.2004.08.010).
- Sunstein C. Pa., and R. H. Thaler. 2009. *Nudge: Improving Decisions About Health, Wealth and Happiness*. London: Penguin.
- 't Hart P., A. C. Wille, R. A. Boin, G. S. A. Dijkstra, F. M. Van der Meer, W. J. Van Noort, and M. Zannoni, et al. 2002. *Politiek-ambtelijke Verhoudingen in Beweging*. Amsterdam: Boom.
- Turnbull, N. 2006. "How Should We Theorise Public Policy. Problematicity and Problem Solving." *Policy and Society* 25: 3–22. doi:[10.1016/S1449-4035\(06\)70072-8](https://doi.org/10.1016/S1449-4035(06)70072-8).
- Turnbull, N. 2013. "The Questioning Theory of Policy Practice: Outline of an Integrated Analytical Framework." *Critical Policy Studies* 7: 115–131. doi:[10.1080/19460171.2013.776501](https://doi.org/10.1080/19460171.2013.776501).
- Vandenboecke, P. 2012. *Working with Wicked Problems*. Brussels: King Baudoin Foundation.
- Van de Graaf, H., and R., Hoppe. 1989. *Beleid En Politiek. Een Inleiding in De Beleidswetenschap En Beleidkunde*. Muiderberg: Coutinho.
- Webber, D. J. 1992. "The Distribution and Use of Knowledge in the Policy Process." In *Advances in Policy Studies since 1950*. Edited by Kelly, R. M., and W. N. Dunn, 383–418. New Brunswick NJ and London: Transaction Publishers.
- Weimer, D. L., and Vining, A. R. 1999. *Policy Analysis. Concepts and Practice*. 3rd ed. Upper Saddle River NJ: Prentice Hall.
- West, W. F. 1988. "The Growth of Internal Conflict in Administrative Regulation." *Public Administration Review* 48: 382–773. doi:[10.2307/975601](https://doi.org/10.2307/975601).
- Yankelovich, D. 1991. *Coming to Public Judgment: Making Democracy Work in a Complex World*. Syracuse NY: Syracuse University Press.
- Wildavsky, A. 1979. *The art and craft of policy analysis*. London and Basingstoke: Macmillan Press.